Contents

Opening Remarks Ivan Leigh	ix
Plenary Lecture - Conversion of Oxide Surfaces to Hydride Surfaces Joseph J. Pesek	1
New Synthetic Methodology for Grafting at Polymer Surfaces David E. Bergbreiter	24
The Synthesis and Properties of Mutually Interpenetrating Organic-Inorganic Networks Bruce M. Novak, Mark W. Ellsworth, and Celine Verrier	41
The Physisorption and Condensation of Aminosilanes on Silica Gel Karl. C. Vrancken, P. Van Der Voort, K. Possemiers, P. Grobet, and E.F. Vansant	46
Extraordinary Thermal Stabilization of Enzymes through Surface Attachment by Covalently Bound Phospholipids K.M.R. Kallury and M. Thompson	58
Ellipsometry, X-Ray Photoelectron Spectroscopy, and Surface Plasmon Resonance as Techniques for the Study of Chemically Modified Surfaces John D. Brennan, R.F. De Bono, Krishna M.R. Kallury, and Ulrich J. Krull	72
Spectroscopy of Evaporated and Langmuir-Blodgett Films of Gadolinium Bisphthalocyanine on Metal Surfaces B. Berno, R. Aroca, and A. Nazri	91
Surface Chemistry of Microporous Manganese Oxides S.L. Suib, H. Cao, and W.S. Willis	101
High Temperature Sorbents for Oxygen Supported on Platinum Modified Zeolites Pramod K. Sharma	109

Chemically Modified Surfaces

Catalysts for Environmental Control Ronald M. Heck and Robert J. Farrauto

Mechanism of Surfactant-Assisted Increase in Coal Liquefaction Yields Gregory S. Hickey and Pramod K. Sharma

The Effect of Glass Fiber Surface Coatings on Fiber Strengths and the Distribution of Flaws J.A. Gómez and J.A. Kilgour

Stability and Reactivity of Dimethylethoxysilane Richard E. Johnson and Douglas I. Ford

Molecular Dynamics of Liquid Chromatography: Chain and Solvent Structure Visualization Mark R. Schure

²H and ¹³C NMR Studies of Reversed Phase Liquid Chromatographic Stationary Phases: Solvation and Temperature Effects *K.B. Sentell, D.M. Bliesner, and S.T. Shearer*

Spectroscopic and Chromatographic Characterization of a Self-Assembled Monolayer as a Stationary Phase M.J. Wirth and H.O. Fatunmbi

FTIR Study of Adsorption at the Silica/Solution Interface: Interaction of Surface Sites with Carbonyl Groups J.-M. Berquier

Subject Index

viii